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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,833	03/05/2002	Richard D. Smith	E-13183	8561

7590 09/04/2003

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EXAMINER

KALIVODA, CHRISTOPHER M

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/091,833

Applicant(s)

SMITH ET AL.

Examiner

Christopher M. Kalivoda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Response to Amendment

On June 2, 2003 Applicant amended the specification, amended the claims and included signed affidavits. No new matter was introduced.

The affidavits filed on June 2, 2003 under 37 CFR 1.131 are sufficient to overcome the Tang, et al. reference. Accordingly, the rejection is withdrawn.

In addition, the changes made to the specification overcome the drawing objections. Accordingly, the drawing objections are withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Application 2003/01115999 to Staats in view of U.S. Patent 6,107,628 to Smith, et al. Regarding independent claims 1 and 9, Staats describes an array of spray emitters (Fig 1) with a reservoir formed on one side (para 0012, lines 4-8) and interfacing the

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array of spray emitters to a mass spectrometer whereby an electrospray of the liquid sample is directed into a mass spectrometer (para 0040, lines 1-3).

Regarding dependent claims 3-8 and 11-16, Staats shows the array of emitters fabricated on a single chip (para 0036, lines 3-7 and Fig 1). Furthermore, the chip is fabricated by an injection molding technique and the chip materials include polycarbonate, polystyrene and polymethylmethacrylate (abstract, lines 8-13 and para 0051, lines 15-24) and the nozzle is hydrophobic (para 0085, lines 3-9).

Since the reservoir size can be adjusted, separation techniques can also be incorporated. Staats teaches the reservoirs interfaced with a liquid separation device such as high performance liquid phase gas chromatography column (para 0084, lines 3-9).

Regarding claims 1, 2, 9 and 10, Staats is silent with respect to providing an ion funnel within the interior of the mass spectrometer and directing the electrosprays through the ion funnel. Staats is also silent with respect to using a multi-capillary inlet at the entrance to a mass spectrometer.

Smith, et al. describes an ion funnel to focus a dispersion of charged particles. This funnel can be used in a mass spectrometer and is positioned adjacent to an ion source. The source would be located near the entrance (col 5, lines 40-56 and Fig 1).

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In addition, Smith, et al. teaches the use of heated multi-capillary inlets at the entrance to a mass spectrometer (col 7, lines 7-15).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Staats to include an ion funnel located within and adjacent to the entrance of a mass spectrometer. It also would have been obvious to one skilled in the art at the time the invention was made to include multi-capillary inlets at the entrance to the mass spectrometer.

Smith, et al. provide the motivation for incorporating an ion funnel and multi-capillary inlets. The ion funnel minimizes dispersal thus minimizing signal losses and the heated multi-capillaries improve the number of ions entering the mass analyzer (col 5, lines 53-57 and lines 7-10).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Application 2002/0185595 to Smith et al. (same assignee) describes an ionization source using a multi-capillary inlet and ion funnel. However, this reference is silent with respect to the use of an array of emitters.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Kalivoda whose telephone number is (703)-305-7443. The examiner can normally be reached on Monday - Friday (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703)-308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9318 for regular communications and (703)-872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

cmk
August 20, 2003


JOHN R. LEE
SUPERVISORY PATENT
TECHNOLOGY CENTER